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(54) **REFRIGERATOR HAVING ICE MAKING FUNCTION**

KÜHLSCHRANK MIT EISERZEUGUNGSFUNKTION

RÉFRIGÉRATEUR PRÉSENTANT UNE FONCTION DE FABRICATION DE GLACE

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(56) References cited:
CN-A- 101 231 084 CN-A- 103 673 474
CN-A- 108 050 757 CN-U- 201 954 883
CN-U- 204 043 281 US-A1- 2011 146 335
US-A1- 2011 234 074

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DescriptionTECHNICAL FIELD

[0001] The present disclosure relates to the field of refrigerator technologies, and in particular, to a refrigerator having an ice making function.

BACKGROUND

[0002] With the continuous development of social economy, people's requirements for quality of life are increasing. With the pursuit of quality of life, the functions of household appliances are also increasing. For example, there is an urgent need for a user to have automatic ice making and crushing functions for refrigerator products.

[0003] At present, for most refrigerator products with automatic ice making and breaking functions in the market, components with ice making function or ice breaking function are installed inside the refrigerator. In this way, after the ice making is finished, ice cubes are completely stored in the refrigerator, which wastes space in the refrigerator. In addition, the refrigerator door requires to be opened when ice cubes are taken, which is inconvenient to operate.

[0004] D1 (US2011/0146335A1) discloses a refrigerator. The refrigerator includes a refrigerator compartment, a refrigerator compartment door opening and closing the refrigerator compartment, and an ice compartment in which an ice maker is disposed. The ice compartment is defined as an insulation space within the refrigerator compartment door. The refrigerator also includes an ice compartment door opening and closing the ice compartment, and a receiving member disposed on the ice compartment door. The receiving member protrudes toward an inside of the refrigerator compartment to provide a receiving space.

SUMMARY

[0005] The present invention provides a refrigerator with an ice making function which is defined by appended claim 1.

[0006] Further advantageous embodiments of the present disclosure are indicated in the dependent claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] In order to describe technical solutions in embodiments of the present disclosure more clearly, the accompanying drawings to be used in the description of the embodiments will be introduced briefly below. Obviously, the accompanying drawings to be described below are merely some embodiments of the present disclosure, and a person of ordinary skill in the art can obtain other drawings according to these drawings without paying any creative effort.

FIG. 1 is a schematic diagram showing a structure of a door inner liner of a refrigerator, in accordance with the related art of the present disclosure;

FIG. 2 is an exploded view showing structures of a refrigerator door and an ice making assembly in a refrigerator with an ice making function, in accordance with some embodiments of the present disclosure;

FIG. 3a is a schematic diagram showing a structure of a first surface of a mounting bracket in a refrigerator with an ice making function, in accordance with some embodiments of the present disclosure;

FIG. 3b is a schematic diagram showing a structure of a second surface of a mounting bracket in a refrigerator with an ice making function, in accordance with some embodiments of the present disclosure;

FIG. 4 is a schematic diagram showing a structure of a second surface of a mounting bracket in a refrigerator with an ice making function, in accordance with some embodiments of the present disclosure;

FIG. 5a is a sectional view along line A-A of FIG. 4;

FIG. 5b is a section along the line A-A of FIG. 4;

FIG. 6 is a schematic diagram showing a cross-section structure of a refrigerator with an ice making function, in accordance with some embodiments of the present disclosure; and

FIG. 7 is an enlargement view of portion B of FIG. 2.

DETAILED DESCRIPTION

[0008] Technical solutions in some embodiments of the present disclosure will be described clearly and completely below with reference to the accompanying drawings in some embodiments of the present disclosure.

[0009] In the description of the present disclosure, it will be understood that orientations or positional relationships indicated by terms "center", "upper", "lower", "front", "rear", "left", "right", "vertical", "horizontal", "top", "bottom", "inner", "outer", "longitudinal", "transverse" etc. are based on orientations or positional relationships shown in the drawings, which merely to facilitate and simplify the description of the present disclosure, but not to indicate or imply that the referred devices or elements must have a particular orientation, or must be constructed or operated in a particular orientation. Therefore, they should not be construed as limitations to the present disclosure.

[0010] In the description of the present disclosure, unless explicitly stated and defined otherwise, it will be noted that the terms "mount", "join", and "connection" should

be interpreted broadly, for example, fixed connection, removable connection, or integrated connection. Specific meanings of the above terms in the present disclosure may be understood by a person of ordinary skill in the art according to specific situations.

[0011] Terms "first" and "second" are merely used for a purpose of description and are not to be construed as indicating or implying the relative importance or implicitly indicating the number of referred technical features. Thus, features defined with "first", "second" may explicitly or implicitly include one or more of the features. In the description of the present disclosure, the term "a plurality of" means two or more unless otherwise specified.

[0012] As shown in FIG. 1, in a prior art refrigerator with an ice making function, functional components for making ice and crushing ice are disposed on a door of a freezer compartment. Bosses 02 are disposed on two sides of a door inner liner 01, and a mounting bracket (not shown) for fixing an ice making component and an ice bucket component is fixedly disposed between the two bosses 02. There is a gap reserved between the mounting bracket and the door inner liner 01, and the gap is used as a space for wires of electrical components. The electrical components are essential for the functional components for making ice and crushing ice. However, the functional components for making ice and crushing ice occupies more internal space of the refrigerator due to the reserved gap.

[0013] On this basis, referring to FIG. 2 to FIG. 5, some embodiments of the present disclosure provide a refrigerator with an ice making function. The refrigerator includes a refrigerator door 1. A mounting bracket 2 is fixedly disposed on an inner surface 11 of the refrigerator door 1. The mounting bracket 2 is configured to mount an ice making assembly 3. The mounting bracket 2 includes a first surface 21 facing the refrigerator door 1 and a second surface 22 opposite to the first surface 21. A wiring groove 211 is formed at an edge of the mounting bracket 2, and the wiring groove 211 is recessed in a direction from the first surface 21 to the second surface 22.

[0014] For ease of description, a region of the mounting bracket for mounting the ice making assembly 3 is referred to as a mounting region 221, and the edge of the mounting bracket where the wiring groove is formed is referred to as an edge region 222. In this way, the second surface 22 includes the mounting region 221 and the edge region 222 that is disposed on at least one side of the periphery of the mounting region 221.

[0015] The wiring groove is formed between a region of the first surface 21 corresponding to the edge region 222 and the inner surface 11 of the refrigerator door 1. For example, in some embodiments of the present disclosure, the first surface 21 is recessed in a direction away from the refrigerator door 1 at a position corresponding to the edge region 222 to form the wiring groove 211, that is, the first surface 21 is recessed at a position corresponding to the edge region 222 toward the second

surface 22 to form the wiring groove 211. Or, in some other embodiments of the present disclosure, the inner surface 11 of the refrigerator door 1 is recessed toward the outer surface of the refrigerator door 1 at a position corresponding to the edge region 222 to form the wiring groove. Or, in yet other embodiments of the present disclosure, the first surface 21 is recessed toward the second surface 22 at a position corresponding to the edge region 222, and the inner surface 11 of the refrigerator door 1 is recessed toward the outer surface of the refrigerator door 1 at a position corresponding to the position where the first surface is recessed, and two recesses together form the wiring groove. Since the wiring groove 211 corresponds to a position of the edge region 222 where the ice making assembly 3 is not mounted, there is no need to reserve a space for wires between a portion of the first surface 21 corresponding to the mounting region 221 and the inner surface 11 of the refrigerator door 1. In this way, the ice making assembly 3 is mounted close to the refrigerator door 1, thereby reducing an internal space of the refrigerator occupied by the ice making assembly 3.

[0016] Since there is no need to reserve the space for wires between the portion of the first surface 21 corresponding to the mounting region 221 and the inner surface 11 of the refrigerator door 1, at least a portion of the first surface 21 corresponding to the mounting region 221 is in close contact with the inner surface 11 of the refrigerator door 1, thereby making the ice making assembly 3 be mounted closer to the refrigerator door 1, which further reduces the internal space of the refrigerator occupied by the ice making assembly 3.

[0017] As shown in FIG. 5b, in some embodiments of the present disclosure, the mounting bracket 2 includes a substantially flat main body portion 213 in the mounting region 221. The mounting bracket 2 includes, in the edge region 222, a bent portion 214 disposed on at least one side of the main body portion 213, and a baffle plate 223 connected to the bent portion 214. After the mounting bracket 2 is mounted on the refrigerator door 1, an included angle between the baffle plate 223 and the inner surface of the refrigerator door 1 is greater than 60°.

[0018] In some embodiments of the present disclosure, a first end of the bent portion 214 is connected to the main body portion 213, and the bent portion 214 is bent in a direction away from the refrigerator door 1 relative to a plane where the main body portion 213 is located. A second end of the bent portion 214 distal to the main body portion 213 is connected to the baffle plate 223, the wiring groove 211 is formed between the bent portion 214 and the baffle plate 223, and an opening of the wiring groove 211 faces the inner surface 11 of the refrigerator door 1.

[0019] In some embodiments of the present disclosure, as shown in FIG. 5b, the bent portion 214 includes a turn 215, a longitudinal extension portion 216, and a transverse extension portion 217. One end of the turn 215 is connected to at least one side of the main body

portion 213 to make a transition between the main body portion 213 and the longitudinal extension portion 216. In some embodiments of the present disclosure, the turn 215 is curved. In some other embodiments of the present disclosure, the turn 215 is planar. The turn 215 facilitates the forming of an overall structure of the mounting bracket and improves the production efficiency. For example, in a machining production mode, the machining difficulty may be reduced, and the yield and the production efficiency may be improved. In an injection molding production mode, it helps with demoulding to improve the yield and the production efficiency.

[0020] In some embodiments of the present disclosure, the longitudinal extension portion 216 is planar. A first end of the longitudinal extension portion 216 is connected to the turn 215, and a second end of the longitudinal extension portion 216 is inclined toward the baffle plate relative to a direction perpendicular to a normal of the main body portion. This design also facilitates machining or help with demolding in injection molding.

[0021] In some embodiments of the present disclosure, a first end of the transverse extension portion 217 is connected to the second end of the longitudinal extension portion 216, and a second end of the transverse extension portion 217 is connected to an end of the baffle plate 223 distal to the inner surface 11 of the refrigerator door 1.

[0022] The turn 215, the longitudinal extension portion 216, the transverse extension portion 217 and the baffle plate 223 together form the wiring groove 211 whose opening is toward the inner surface 11.

[0023] The edge of the mounting bracket 2 include an upper edge located above the mounting region, a left edge located on a left side of the mounting region, and a right edge located on a right side of the mounting region. For ease of description, as shown in and FIG. 4, the upper edge is described as an upper edge region 222a, the left edge is described as a left edge region 222b, and the right edge is described as a right edge region 222c.

[0024] As shown in FIG. 3a, FIG. 3b and FIG. 4, an upper wiring groove 211a is formed at a portion corresponding to the upper edge region 222a. A left wiring groove 211b is formed at a portion corresponding to the left edge region 222b. A right wiring groove 211c is formed at a portion corresponding to the right edge region 222c. As shown in FIG. 3a and FIG. 3b, all of the upper wiring groove 211a, the left wiring groove 211b and the right wiring groove 211c are formed, and both ends of the upper wiring groove 211a are respectively communicated with the left wiring groove 211b and the right wiring groove 211c. In this way, when wires are routed, the wires are routed via all of the three wiring grooves 211a, 211b, and 211c. In some embodiments of the present disclosure, electrical components proximate to the left edge region 222b are routed via the left wiring groove 211b, electrical components proximate to the right edge region 222c are routed via the right wiring groove 211c, and electrical components proximate to the upper edge

region 222a are routed via the upper wiring groove 211a. In this way, the space for routing wires is large and choices for routing wires are various.

[0025] There are various arrangements for the wiring groove 211. As shown in FIG. 3a and FIG. 3b and FIG. 5a, in some embodiments of the present disclosure, the first surface 21 is recessed in a direction away from the refrigerator door 1 at the position corresponding to the edge region 222 to form the wiring groove 211. In order to increase a depth of the wiring groove 211, the edge region 222 extends in a direction away from the refrigerator door 1 to form a projecting edge 24. In this way, not only the depth of the wiring groove 211 is increased, but also the ice making assembly 3 is limited in a left-right direction by the projecting edge 24, which makes the installation of the ice making assembly 3 more stable.

[0026] In some embodiments of the present disclosure, the minimum distance between the baffle plate 223 in the edge region 222 and the inner surface 11 of the refrigerator door 1 is greater than a distance between the first surface 21 and the inner surface 11, so that after the first surface 21 is in close contact with the inner surface 11 of the refrigerator door 1, there is still a distance between the baffle plate 223 and the inner surface 11 of the refrigerator door 1. Therefore, even if there is a baffle plate 223, the first surface 21 is not prevented from closely contacting the inner surface 11 of the refrigerator door 1. An end of the baffle plate 223 distal to the inner surface 11 of the refrigerator door 1 extends toward a side away from the inner surface 11 relative to the first surface 21 and is connected to the bent portion 214, thereby enhancing a position limit of the second surface 22 to the ice making assembly disposed on the second surface 22.

[0027] In some embodiments of the present disclosure, the wiring groove is formed in the inner surface 11 of the refrigerator door 1. That is, the inner surface 11 of the refrigerator door 1 is recessed toward the outer surface of the refrigerator door 1 at a position corresponding to the edge region 222 to form the wiring groove.

[0028] In some embodiments of the present disclosure, the first surface 21 of the mounting bracket 2 is recessed in a direction away from the refrigerator door 1 at a position corresponding to the edge region 222 to form the wiring groove 211, and the inner surface 11 of the refrigerator door 1 is recessed toward the outer surface of the refrigerator door 1 at a position corresponding to the wiring groove 211 to form a wiring groove. The wiring groove 211 in the first surface 21 of the mounting bracket 2 is aligned with the wiring groove in the inner surface of the refrigerator door 1 to form a wiring groove with a larger volume, which increases the volume of the wiring groove, and this is suitable for a scene with more cables.

[0029] In order to connect wires of the ice making assembly 3 to a main board of the refrigerator, the wires of the ice making assembly 3 are connected to the main board of the cabinet through a wire connector on the refrigerator door 1 after passing through the wiring groove

211. In some embodiments of the present disclosure, as shown in FIG. 2 and FIG. 7, a wire connector 4 is disposed on the inner surface 11 of the refrigerator door 1 at a position corresponding to the upper wiring groove 211a. The wire connector 4 is configured to connect to wires in the wiring groove 211a and connect to wires in the refrigerator door 1 through a hinge hole of an upper hinge of the refrigerator door 1, so that the wires in the wiring groove 211a are connected to the main board in the refrigerator. In some embodiments of the present disclosure, the wire connector 4 is located at a corner of the inner surface 11 of the refrigerator door 1 corresponding to a position of the upper wiring groove 211a.

[0030] As shown in FIG. 2, in some embodiments of the present disclosure, in a case where the wiring groove 211 is formed only in the first surface 21 of the mounting bracket 2, except for a position on the inner surface 11 of the refrigerator door 1 where the wire connector 4 is disposed, positions on the inner surface of refrigerator door 1 corresponding to the mounting region 221 and the edge region 222 are located on a same plane. That is, there is no limiting boss or groove structure at a position on the inner surface 11 of the refrigerator door 1 corresponding to the mounting region. In this way, the mounting bracket is made to extend to the surrounding area, thereby increasing the size and effective volume of the ice making assembly 3.

[0031] In some embodiments of the present disclosure, the mounting bracket 2 is connected to the inner surface 11 of the refrigerator door 1 through threads or fastener(s).

[0032] In order to improve the reliability of products, as shown in FIG. 3a and FIG. 3b, a plurality of cable clips 212 are provided in the wiring groove 211, and wires in the wiring groove 211 are fastened and fixed through the cable clips 212.

[0033] In some embodiments of the present disclosure, the ice making assembly 3 includes an ice crusher. In some embodiments of the present disclosure, an ice crushing motor of the ice crusher is fixed on the inner surface 11 of the refrigerator door 1. In some embodiments of the present disclosure, the ice crushing motor of the ice crusher is fixed on the mounting bracket 2. As shown in FIG. 3a and FIG. 3b, a motor mounting box 23 is disposed on the first surface 21 of the mounting bracket, and the ice crushing motor is fixed in the motor mounting box 23. Since the motor mounting box 23 extends toward the refrigerator door relative to the first surface 21, in a case where the ice crushing motor is installed, operation is easier and positioning is more accurate. In some embodiments of the present disclosure, the motor mounting box 23 extends toward the cabinet of the refrigerator, that is, the motor mounting box 23 protrudes toward the compartment of the refrigerator. In this way, a foaming layer of the door is not made to be reduced, so that a heat preservation effect of the refrigerator is not reduced. In some embodiments of the present disclosure, as shown in FIG. 2, a cavity 13 is formed at a position

of the refrigerator door 1 corresponding to the motor mounting box 23, and the motor mounting box 23 extends into the cavity 13. This saves storage space of the cabinet.

[0034] In some embodiments of the present disclosure, as shown in FIGS. 2 and 6, the ice making assembly 3 includes an ice maker 31 and an ice storage bucket 32 disposed below the ice maker 31. An ice outlet is provided on the bottom of the ice storage bucket 32. An ice outlet passage 12 extending through the refrigerator door 1 is provided in the refrigerator door 1. One end of the ice outlet passage 12 is communicated with the ice outlet of the ice storage bucket 32, and another end of the ice outlet passage 12 extends out of the refrigerator door 1, that is, extends out of the outer surface of the refrigerator door 1. Therefore, the ice is taken directly without opening the refrigerator door 1, which makes operation of taking ice convenient.

[0035] In some embodiments of the present disclosure, as shown in FIG. 2, an ice making cover 33 is further disposed above the ice maker 31 to prevent foreign objects from falling into the ice maker.

[0036] The foregoing descriptions are merely some specific implementation manners of the present disclosure, but the protection scope of the present disclosure is not limited thereto. The protection scope of the present invention is defined by the appended claims.

Claims

1. A refrigerator with an ice making function, the refrigerator comprising a refrigerator door (1), a mounting bracket (2), an ice making assembly (3) and main board, the mounting bracket (2) being fixedly disposed on an inner surface (11) of the refrigerator door (1), the mounting bracket (2) being configured to mount the ice making assembly (3), and the mounting bracket (2) including a first surface (21) facing the refrigerator door (1), and a second surface (22) opposite to the first surface (21), wherein a region on the second surface (22) configured to mount the ice making assembly (3) is a mounting region (221), and a region on the second surface (22) configured to form a wiring groove (211) is an edge region (222), wherein the wiring groove (211) corresponds to a position of the edge region (222) where the ice making assembly (3) is not mounted,

the edge region (222) is disposed on at least one side of a periphery of the mounting region (221), and at least a portion of the first surface (21) corresponding to the mounting region (221) is in close contact with the inner surface (11) of the refrigerator door (1); wires of the ice making assembly (3) are connected to the main board of the cabinet of the refrigerator through a wire connector (4) on the refrigerator door (1) after

passing through the wiring groove (211);
the wiring groove (211) being formed on an edge
of the mounting bracket (2), and the wiring
groove (211) being recessed in a direction from
the first surface (21) to the second surface (22),
and/or,

the wiring groove being formed in the inner sur-
face (11) of the refrigerator door (1) at a position
corresponding to the edge of the mounting
bracket (2), and the wiring groove being re-
cessed in a direction from the inner surface (11)
of the refrigerator door (1) to an outer surface of
the refrigerator door (1);

wherein the edge of the mounting bracket (2)
includes an upper edge located on an upper por-
tion of the mounting bracket (2), a left edge lo-
cated on a left side of the mounting bracket (2),
and a right edge located on a right side of the
mounting bracket (2);

characterized in that

the wiring groove (211) includes an upper wiring
groove (211a) corresponding to the upper edge,
a left wiring groove (211b) corresponding to the
left edge and a right wiring groove (211c) cor-
responding to the right edge; two ends of the upper
wiring groove (211a) are respectively commu-
nicated with the left wiring (211b) groove and
the right wiring groove (211c).

2. The refrigerator with the ice making function accord-
ing to claim 1, wherein the mounting bracket (2) is
connected to the inner surface (11) of the refrigerator
door (1) through threads or fasteners.
3. The refrigerator with the ice making function accord-
ing to claim 1, wherein the edge of the mounting
bracket (2) extends in a direction away from the re-
frigerator door (1) to form a projecting edge (24).
4. The refrigerator with the ice making function accord-
ing to claim 1, wherein a motor mounting box (23) is
disposed on the first surface (21) of the mounting
bracket (2), and an ice crushing motor of the ice mak-
ing assembly (3) is fixed in the motor mounting box
(23).
5. The refrigerator with the ice making function accord-
ing to claim 4, wherein

in a case where the mounting bracket (2) is in-
stalled on the refrigerator door (1), the motor
mounting box (23) extends toward a cabinet of
the refrigerator; or,
a cavity (13) is formed at a position of the refrig-
erator door (1) corresponding to the motor
mounting box (23), and the motor mounting box
(23) extends into the cavity (13).

6. The refrigerator with the ice making function accord-
ing to claim 1, wherein the wiring groove (211) is
formed only on the first surface (21) of the mounting
bracket (2), and
the wire connector (4) is disposed at a position cor-
responding to the upper wiring groove (211a) on the
inner surface (11) of the refrigerator door (1), the
wire connector (4) is configured to connect the wires
of the ice making assembly (3) in the upper wiring
groove (211a) and connect to the wires of the main
board in the refrigerator door (1) through a hinge hole
of an upper hinge of the refrigerator door (1).
7. The refrigerator with the ice making function accord-
ing to claim 6, wherein the wire connector (4) is dis-
posed at a corner of the inner surface (11) of the
refrigerator door (1) corresponding to a position of
the upper wiring groove (211a).
8. The refrigerator with the ice making function accord-
ing to claim 1, wherein a plurality of cable clips (212)
are distributed in the wiring groove (211), and the
cable clips (212) are configured to fix cables in the
wiring groove (211).
9. The refrigerator with the ice making function accord-
ing to claim 1, wherein the ice making assembly (3)
includes an ice maker (31) and an ice storage bucket
(32) disposed below the ice maker (31), an ice outlet
is disposed on a bottom of the ice storage bucket
(32), an ice outlet passage (12) extending through
the refrigerator door (1) is disposed in the refrigerator
door (1), an end of the ice outlet passage (12) is
communicated with the ice outlet of the ice storage
bucket (32), and another end of the ice outlet pas-
sage (12) extends out of the refrigerator door (1).
10. The refrigerator with the ice making function accord-
ing to claim 9, wherein an ice making cover (33) is
further disposed above the ice maker (31).

Patentansprüche

1. Ein Kühlschrank mit Eiszubereitungsfunktion, der
Kühlschrank umfasst eine Kühlschranktür (1), eine
Montagehalterung (2), eine Eisbereitungsbaugrup-
pe (3) und eine Hauptplatine, die Montagehalterung
(2) ist fest an einer Innenfläche (11) der Kühlschrank-
tür (1) angeordnet, die Montagehalterung (2) ist zur
Befestigung der Eisbereitungsbaugruppe (3) konfi-
guriert, und die Montagehalterung (2) weist eine ers-
te Oberfläche (21), die der Kühlschranktür (1) zuge-
wandt ist, und eine zweite Oberfläche (22) auf, die
der ersten Oberfläche (21) gegenüberliegt, wobei
ein Bereich auf der zweiten Oberfläche (22), der zur
Montage der Eisbereitungsbaugruppe (3) konfigu-
riert ist, ein Montagebereich (221) ist, und ein Be-

reich auf der zweiten Oberfläche (22), der so konfiguriert ist, dass er eine Verdrahtungsnut (211) bildet, ein Randbereich (222) ist, wobei die Verdrahtungsnut (211) einer Position des Randbereichs (222) entspricht, an welcher die Eisbereitungsbaugruppe (3) nicht montiert ist, der Randbereich (222) auf mindestens einer Seite eines Umfangs des Montagebereichs (221) angeordnet ist, und mindestens ein Teil der ersten Oberfläche (21), der dem Montagebereich (221) entspricht, in engem Kontakt mit der Innenoberfläche (11) der Kühltür (1) steht;

Leitungen der Eisbereitungsbaugruppe (3) sind über einen Kabelverbinder (4) an der Kühltür (1) mit der Hauptplatine des Kühltürgehäuses verbunden, nachdem sie durch die Verdrahtungsnut (211) geführt wurden;

die Verdrahtungsnut (211) ist an einer Kante der Montagehalterung (2) ausgebildet, und die Verdrahtungsnut (211) ist in einer Richtung von der ersten Oberfläche (21) zur zweiten Oberfläche (22) vertieft, und/oder

die Verdrahtungsnut in der Innenfläche (11) der Kühltür (1) an einer Position ausgebildet ist, die der Kante der Montagehalterung (2) entspricht, und die Verdrahtungsnut ist in einer Richtung von der Innenfläche (11) der Kühltür (1) zu einer Außenfläche der Kühltür (1) vertieft;

wobei die Kante der Montagehalterung (2) eine obere Kante umfasst, die sich an einem oberen Abschnitt der Montagehalterung (2) befindet, eine linke Kante umfasst, die sich an einer linken Seite der Montagehalterung (2) befindet, und eine rechte Kante umfasst, die sich an einer rechten Seite der Montagehalterung (2) befindet;

dadurch gekennzeichnet, dass

die Verdrahtungsnut (211) umfasst eine obere Verdrahtungsnut (211a), die der Oberkante entspricht, eine linke Verdrahtungsnut (211b), die der linken Kante entspricht, und eine rechte Verdrahtungsnut (211c), die der rechten Kante entspricht;

zwei Enden der oberen Verdrahtungsnut (211a) sind jeweils mit der linken Verdrahtungsnut (211b) und der rechten Verdrahtungsnut (211c) verbunden.

2. Der Kühltür mit Eisbereitungsfunktion nach Anspruch 1, wobei die Montagehalterung (2) über Gewinde oder Befestigungselemente mit der Innenfläche (11) der Kühltür (1) verbunden ist.
3. Der Kühltür mit Eisbereitungsfunktion nach Anspruch 1, wobei sich der Rand der Montagehalterung (2) in eine Richtung weg von der Kühltür (1) erstreckt, um einen vorstehenden Rand (24) zu bilden.

den.

4. Der Kühltür mit Eisbereitungsfunktion nach Anspruch 1, wobei ein Motormontagekasten (23) auf der ersten Oberfläche (21) der Montagehalterung (2) angeordnet ist, und ein Eiszerkleinerungsmotor der Eisherstellungsbau-
gruppe (3) im Motormontagekasten (23) befestigt ist.

5. Der Kühltür mit Eisbereitungsfunktion nach Anspruch 4, wobei

in einem Fall, in dem die Montagehalterung (2) an der Kühltür (1) installiert ist, erstreckt sich der Motormontagekasten (23) in Richtung eines Kastens des Kühltürs; oder, ein Hohlraum (13) an einer Position der Kühltür (1) gebildet ist, die dem Motormontagekasten (23) entspricht, und der Motormontagekasten (23) sich in den Hohlraum (13) erstreckt.

6. Der Kühltür mit Eisbereitungsfunktion nach Anspruch 1, wobei die Verdrahtungsnut (211) nur auf der ersten Oberfläche (21) der Montagehalterung (2) ausgebildet ist, und der Kabelverbinder (4) an einer Position angeordnet ist, die der oberen Verdrahtungsnut (211a) auf der Innenfläche (11) der Kühltür (1) entspricht,

der Kabelverbinder (4) ist so konfiguriert, dass er die Leitungen der Eisbereitungsbaugruppe (3) in der oberen Verdrahtungsnut (211a) verbindet und über ein Scharnierloch eines oberen Scharniers der Kühltür (1) mit den Leitungen der Hauptplatine in der Kühltür (1) verbindet.

7. Der Kühltür mit Eisbereitungsfunktion nach Anspruch 6, wobei der Kabelverbinder (4) an einer Ecke der Innenfläche (11) der Kühltür (1) angeordnet ist, die einer Position der oberen Verdrahtungsnut (211a) entspricht.

8. Der Kühltür mit Eisbereitungsfunktion nach Anspruch 1, wobei mehrere Leitungsklemmen (212) in der Verdrahtungsnut (211) verteilt sind, und die Leitungsklemmen (212) so konfiguriert sind, dass sie die Leitungen in der Verdrahtungsnut (211) befestigen.

9. Der Kühltür mit Eiszubereitungsfunktion nach Anspruch 1, wobei die Eiszubereitungsbau-
gruppe (3) einen Eisbereiter (31) und einen unter dem Eisbereiter (31) angeordneten Eisaufbewahrungsbehälter (32) umfasst, am Boden des Eisspeicherbehälters (32) ist ein Eisauslass angeordnet ist, in der Kühltür (1) ein durch die Kühltür (1) verlaufender Eisaustrittskanal (12) angeordnet ist, ein Ende des Eisauslasskanals (12) mit dem Eisaus-

lass des Eisaufbewahrungsbehälters (32) verbunden ist, und ein anderes Ende des Eisauslasskanals (12) sich aus der Kühltür (1) erstreckt.

10. Der Kühlschrank mit Eisbereitungsfunktion nach Anspruch 9, wobei über dem Eisbereiter (31) außerdem eine Eisbereitungsabdeckung (33) angeordnet ist.

Revendications

1. Un réfrigérateur avec fonction fabrication de glace, le réfrigérateur comprenant une porte de réfrigérateur (1), un support de montage (2), un ensemble de fabrication de glace (3) et une carte principale, le support de montage (2) étant disposé de manière fixe sur une surface interne (11) de la porte du réfrigérateur (1), le support de montage (2) étant configuré pour monter l'ensemble de fabrication de glace (3), et le support de montage (2) comprenant une première surface (21) faisant face à la porte du réfrigérateur (1), et une seconde surface (22) opposée à la première surface (21), dans lequel une région sur la seconde surface (22) configurée pour monter l'ensemble de fabrication de glace (3) est une région de montage (221), et une région sur la seconde surface (22) configurée pour former une rainure de câblage (211) est une région de bord (222), dans lequel la rainure de câblage (211) correspond à une position de la région de bord (222) où l'ensemble de fabrication de glace (3) n'est pas monté, la région de bord (222) est disposée sur au moins un côté d'une périphérie de la région de montage (221), et au moins une partie de la première surface (21) correspondant à la région de montage (221) est en contact étroit avec la surface interne (11) de la porte du réfrigérateur (1);
les fils de l'ensemble de fabrication de glaçons (3) sont connectés à la carte principale de l'armoire du réfrigérateur par l'intermédiaire d'un connecteur de fil (4) sur la porte du réfrigérateur (1) après être passés à travers la rainure de câblage (211);
la rainure de câblage (211) étant formée sur un bord du support de montage (2), et la rainure de câblage (211) étant évidée dans une direction allant de la première surface (21) à la seconde surface (22), et/ou,
la rainure de câblage étant formée dans la surface intérieure (11) de la porte du réfrigérateur (1) à une position correspondant au bord du support de montage (2), et la rainure de câblage étant en retrait dans une direction allant de la surface interne (11) de la porte du réfrigérateur (1) vers une surface externe de la porte du réfrigérateur (1);
dans lequel le bord du support de montage (2)

comprend un bord supérieur situé sur une partie supérieure du support de montage (2), un bord gauche situé sur un côté gauche du support de montage (2) et un bord droit situé sur un côté droit du support de montage (2);

caractérisé en ce que

la rainure de câblage (211) comprend une rainure de câblage supérieure (211a) correspondant au bord supérieur, une rainure de câblage gauche (211b) correspondant au bord gauche et une rainure de câblage droite (211c) correspondant au bord droit;
deux extrémités de la rainure de câblage supérieure (211a) communiquent respectivement avec la rainure de câblage gauche (211b) et la rainure de câblage droite (211c).

2. Réfrigérateur doté de la fonction de fabrication de glaçons selon la revendication 1, dans lequel le support de montage (2) est relié à la surface intérieure (11) de la porte du réfrigérateur (1) par l'intermédiaire de filetages ou de fixations.
3. Réfrigérateur doté de la fonction de fabrication de glace selon la revendication 1, dans lequel le bord du support de montage (2) s'étend dans une direction opposée à la porte du réfrigérateur (1) pour former un bord saillant (24).
4. Réfrigérateur doté de la fonction de fabrication de glace selon la revendication 1, dans lequel un boîtier de montage de moteur (23) est disposé sur la première surface (21) du support de montage (2), et un moteur de broyage de glace de l'ensemble de fabrication de glace (3) est fixé dans le boîtier de montage de moteur (23).
5. Réfrigérateur doté de la fonction de fabrication de glace selon la revendication 4, dans lequel
dans le cas où le support de montage (2) est installé sur la porte du réfrigérateur (1), le boîtier de montage de moteur (23) s'étend vers une armoire du réfrigérateur ; ou,
une cavité (13) est formée au niveau d'une position de la porte du réfrigérateur (1) correspondant au boîtier de montage de moteur (23), et le boîtier de montage de moteur (23) s'étend dans la cavité (13).
6. Réfrigérateur doté de la fonction de fabrication de glaçons selon la revendication 1, dans lequel la rainure de câblage (211) est formée uniquement sur la première surface (21) du support de montage (2), et le connecteur de fil (4) est disposé à une position correspondant à la rainure de câblage supérieure (211a) sur la surface intérieure (11) de la porte du réfrigérateur (1),

le connecteur de fil (4) est configuré pour connecter les fils de l'ensemble de fabrication de glace (3) dans la rainure de câblage supérieure (211a) et se connecter aux fils de la carte principale dans la porte du réfrigérateur (1) à travers un trou de charnière d'un charnière supérieure de la porte du réfrigérateur (1). 5

7. Réfrigérateur doté de la fonction de fabrication de glaçons selon la revendication 6, dans lequel le connecteur de fil (4) est disposé au niveau d'un coin de la surface intérieure (11) de la porte du réfrigérateur (1) correspondant à une position de la rainure de câblage supérieure (211a). 10

8. Réfrigérateur à fonction de fabrication de glace selon la revendication 1, dans lequel une pluralité de serre-câbles (212) est répartie dans la rainure de câblage (211), et les serre-câbles (212) sont configurés pour fixer des câbles dans la rainure de câblage (211). 15

9. Réfrigérateur doté de la fonction de fabrication de glaçons selon la revendication 1, dans lequel l'ensemble de fabrication de glaçons (3) comprend une machine à glaçons (31) et un seau de stockage de glaçons (32) disposé sous la machine à glaçons (31), une sortie de glace est disposée sur un fond du seau de stockage de glace (32), un passage de sortie de glace (12) s'étendant à travers la porte du réfrigérateur (1) est disposé dans la porte du réfrigérateur (1), une extrémité du passage de sortie de glace (12) communique avec la sortie de glace du seau de stockage de glace (32), et une autre extrémité du passage de sortie de glace (12) s'étend hors de la porte du réfrigérateur (1). 20 25 30 35

10. Réfrigérateur doté de la fonction de fabrication de glaçons selon la revendication 9, dans lequel un couvercle de fabrication de glaçons (33) est en outre disposé au-dessus de la machine à glaçons (31). 40

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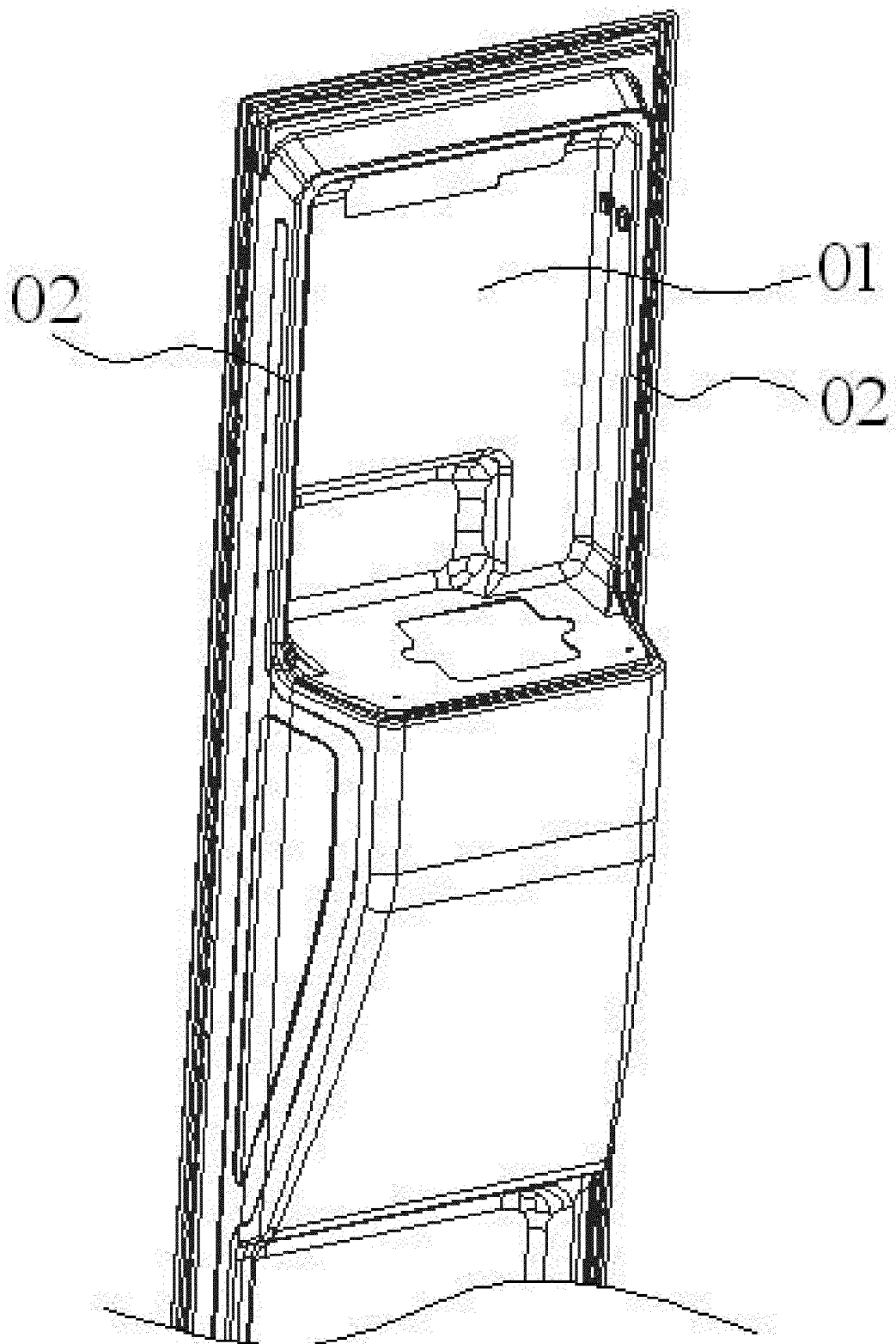


FIG. 1

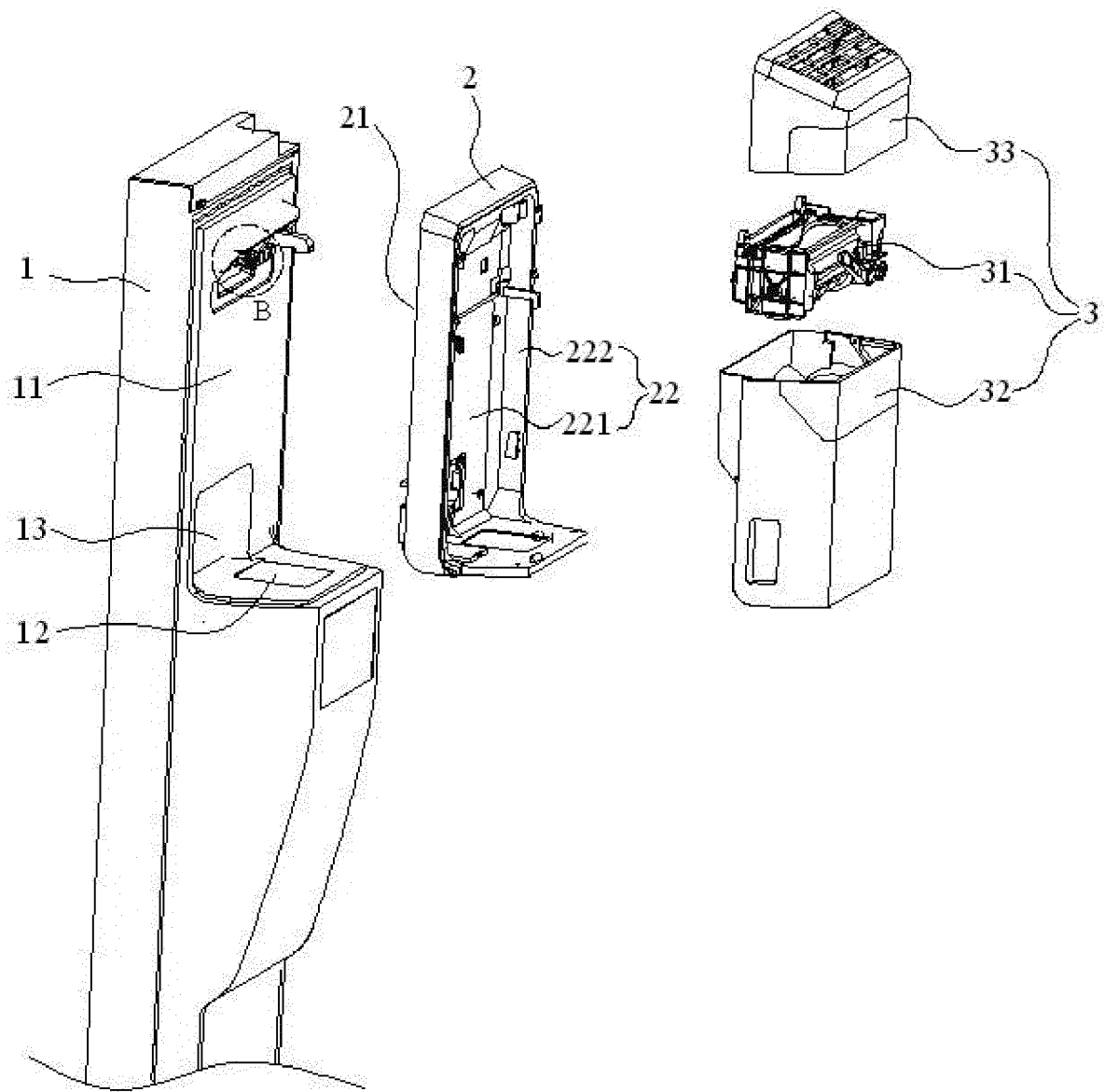


FIG. 2

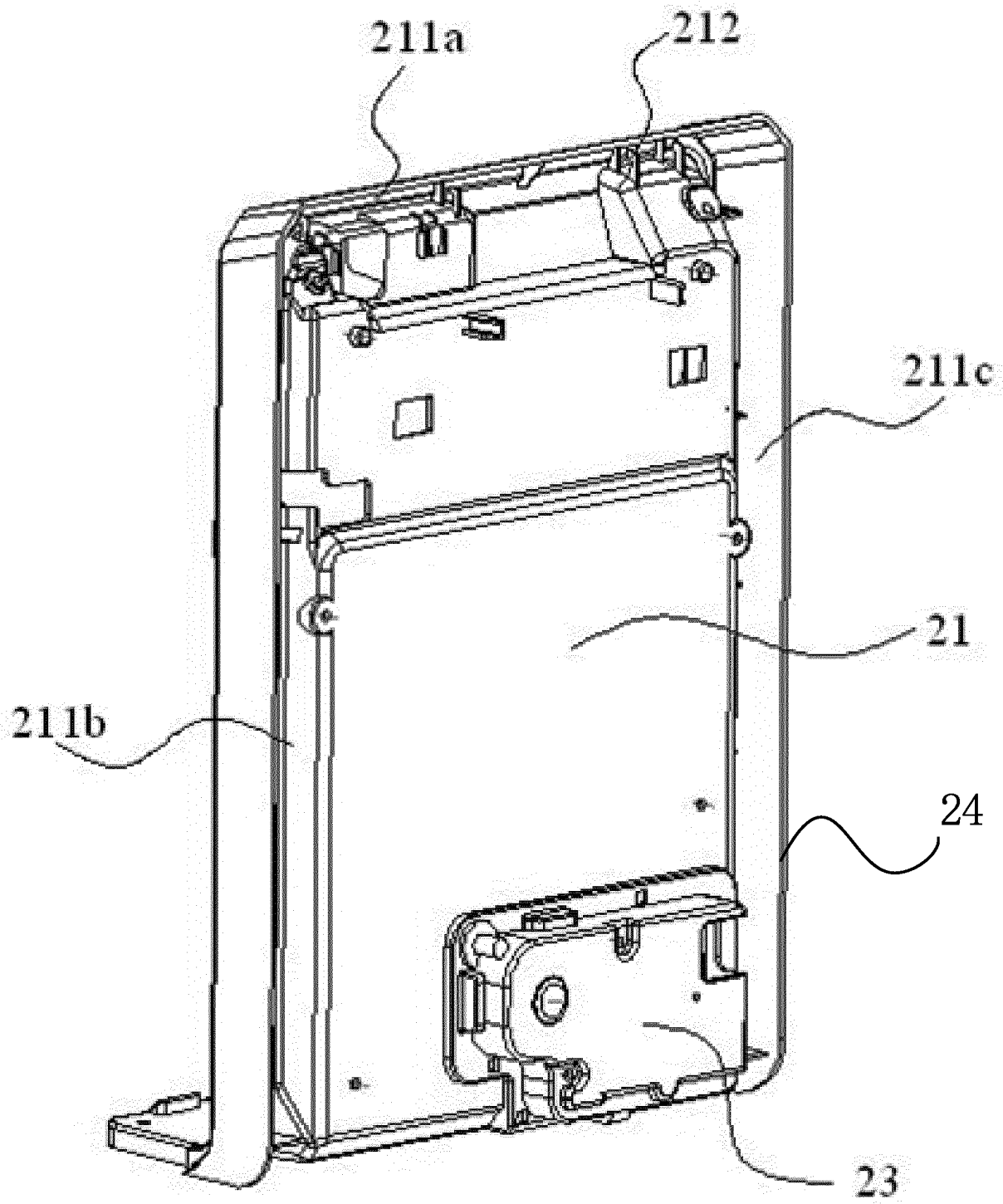


FIG. 3a

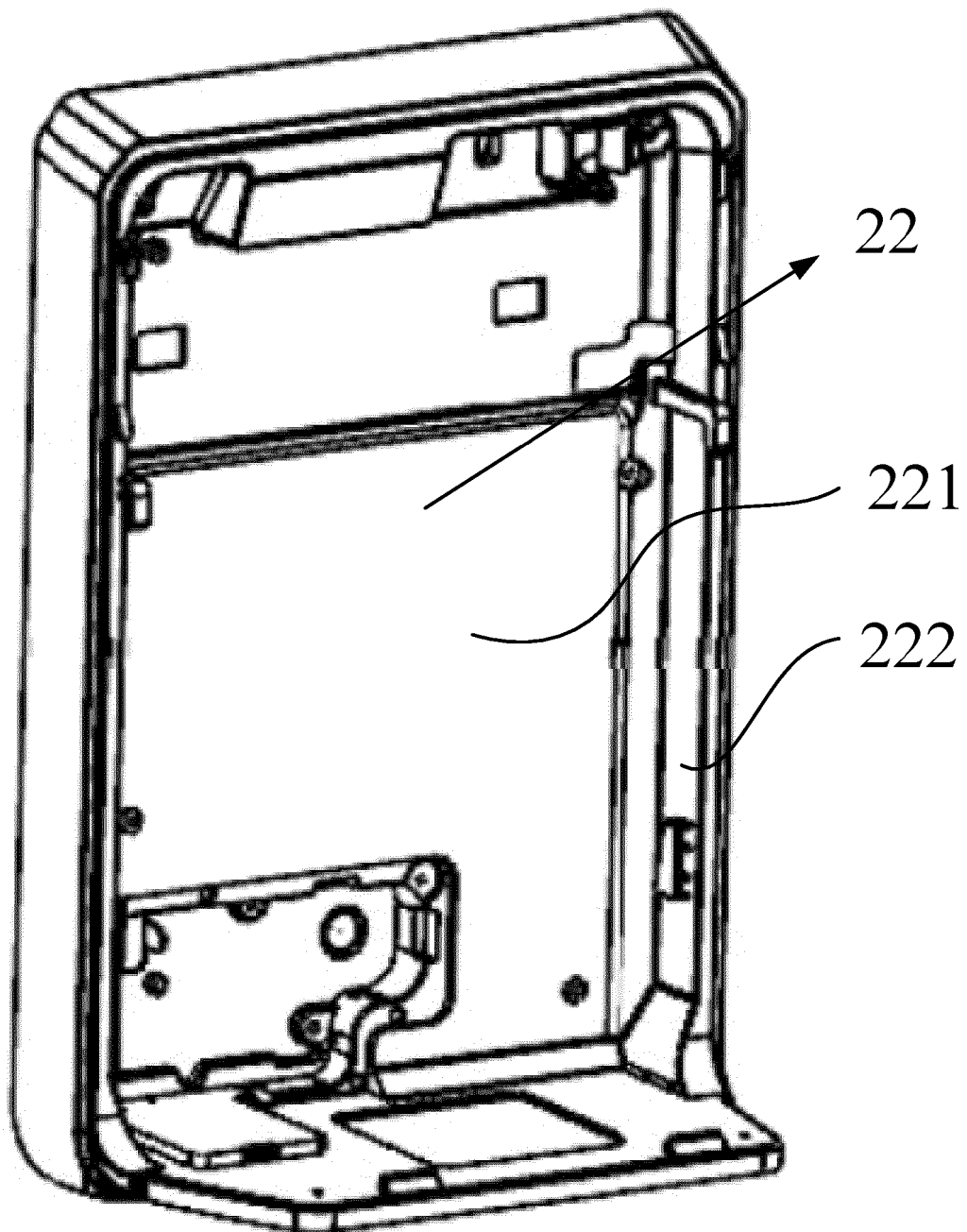


FIG. 3b

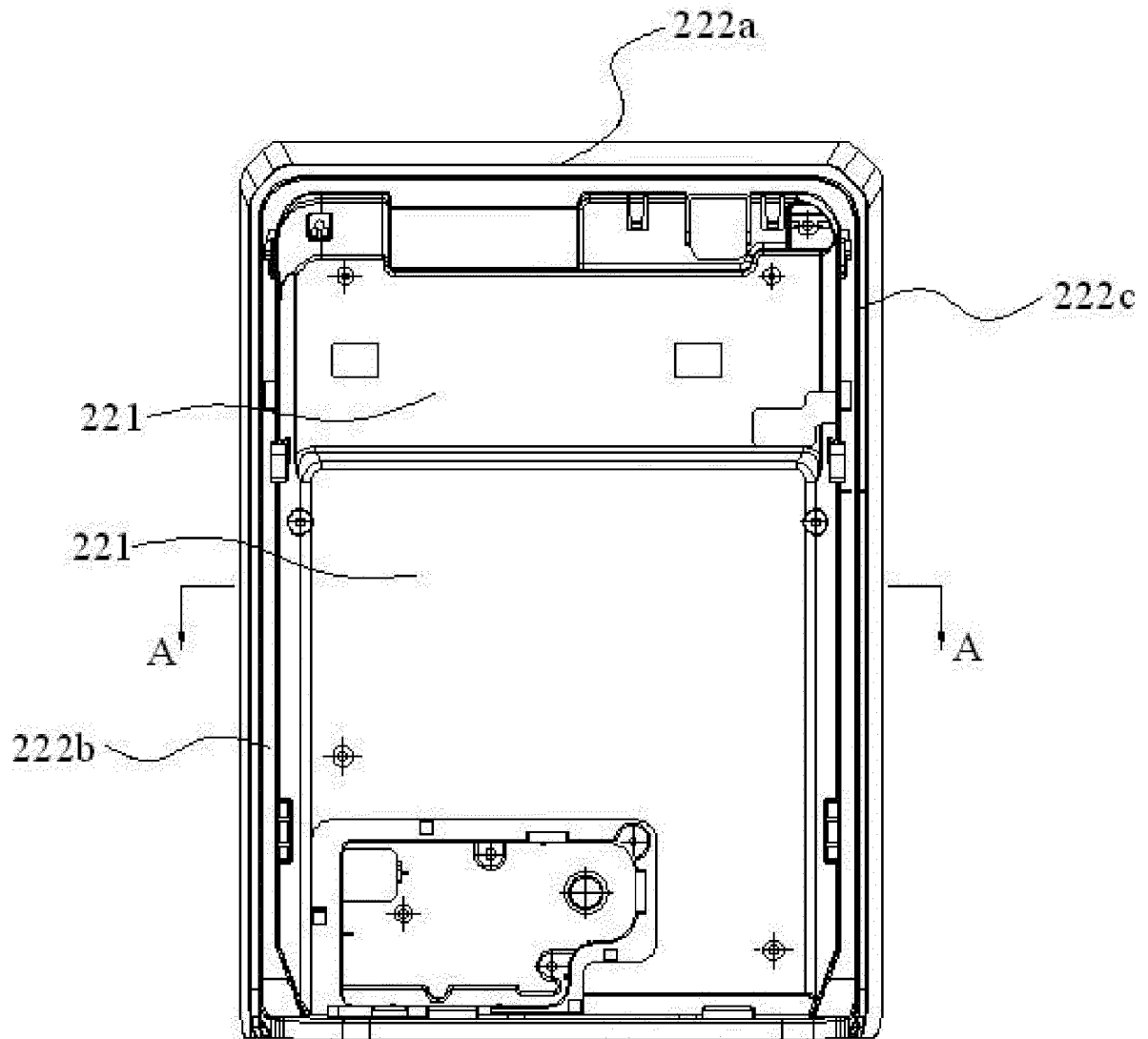


FIG. 4

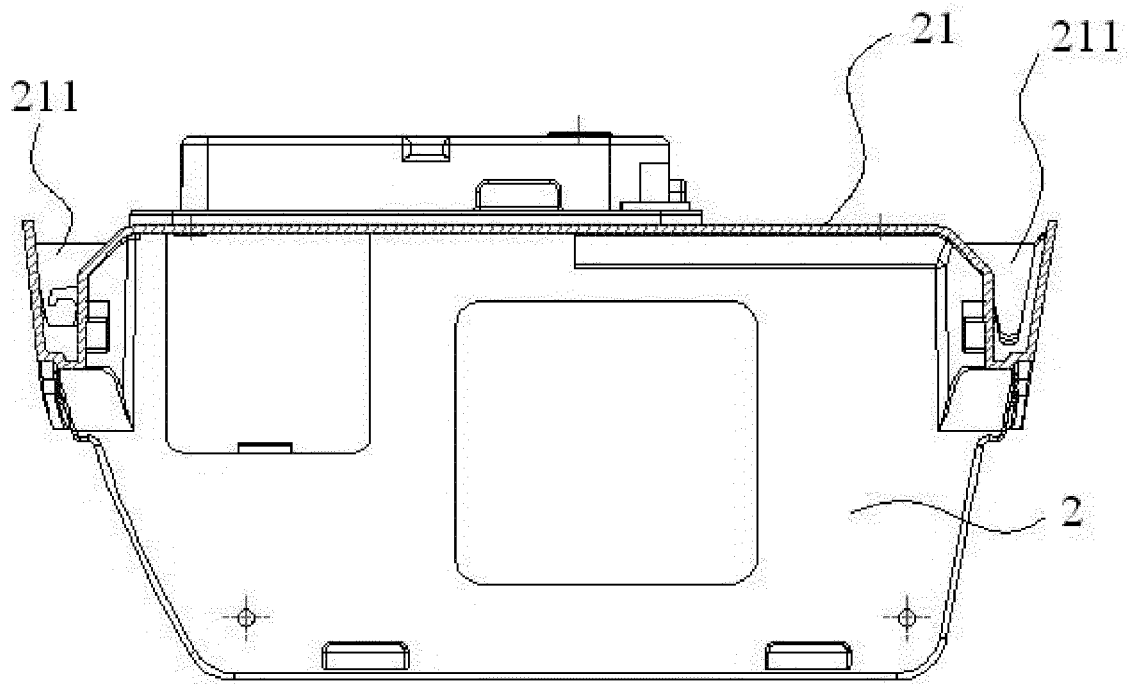


FIG. 5a

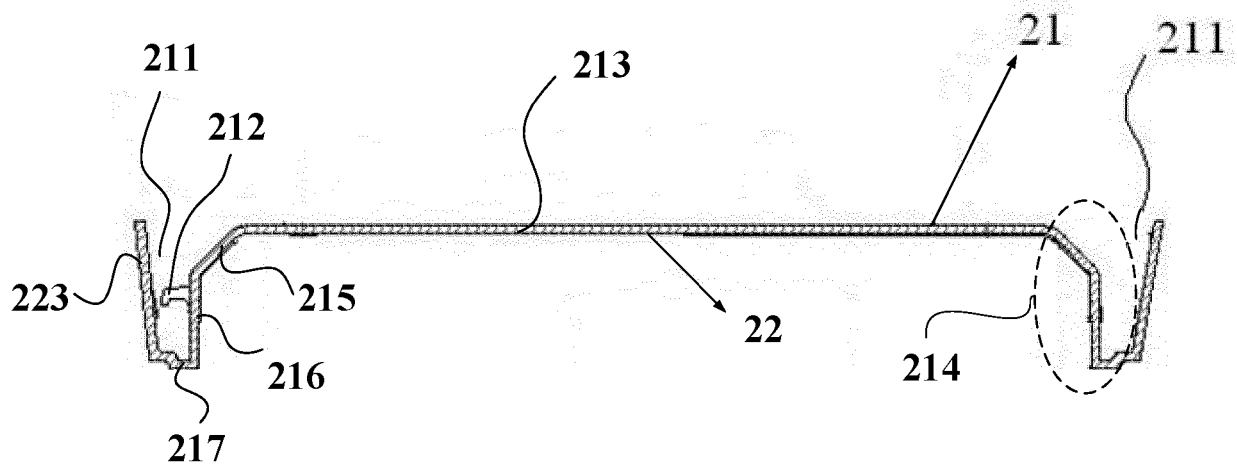


FIG. 5b

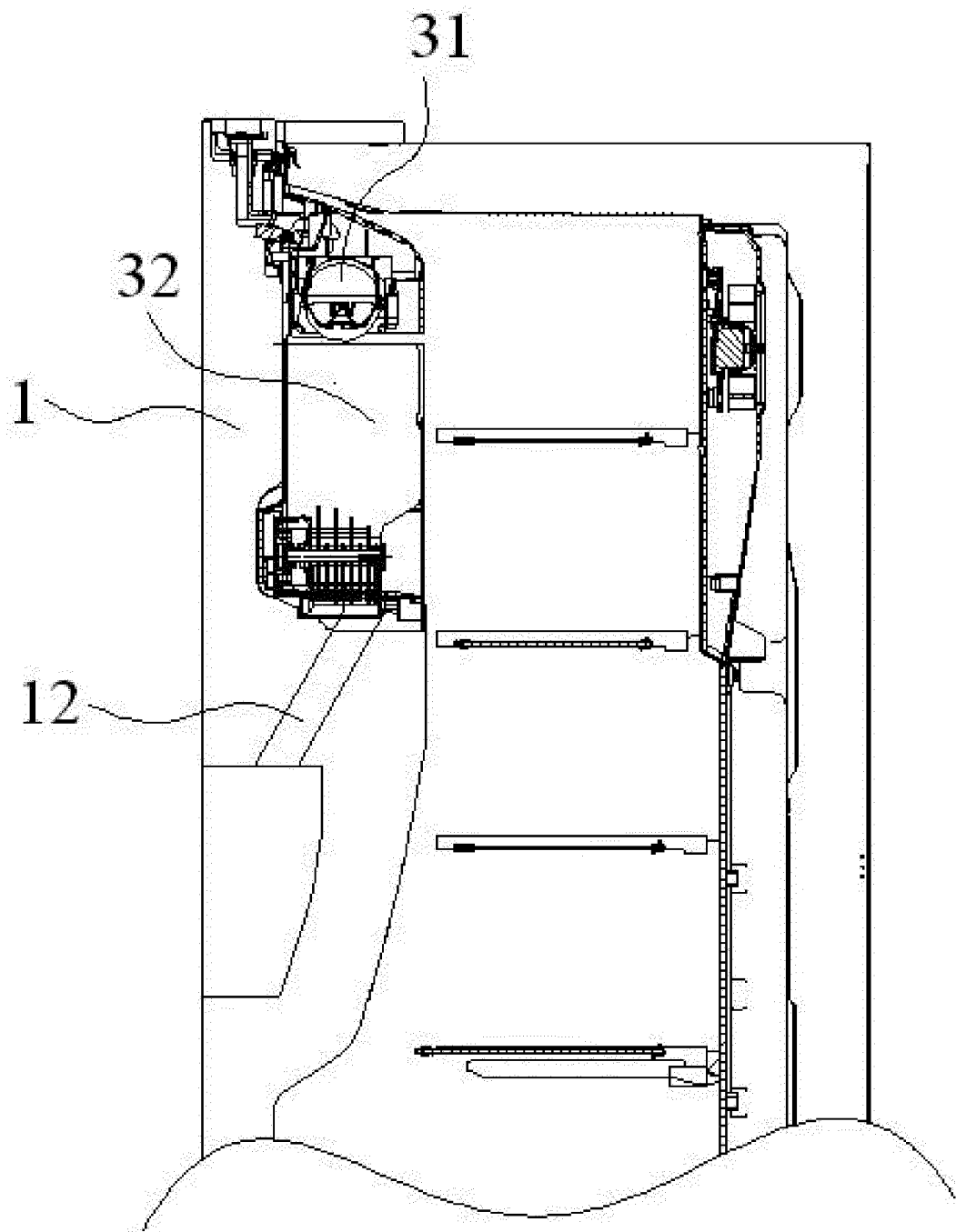


FIG. 6

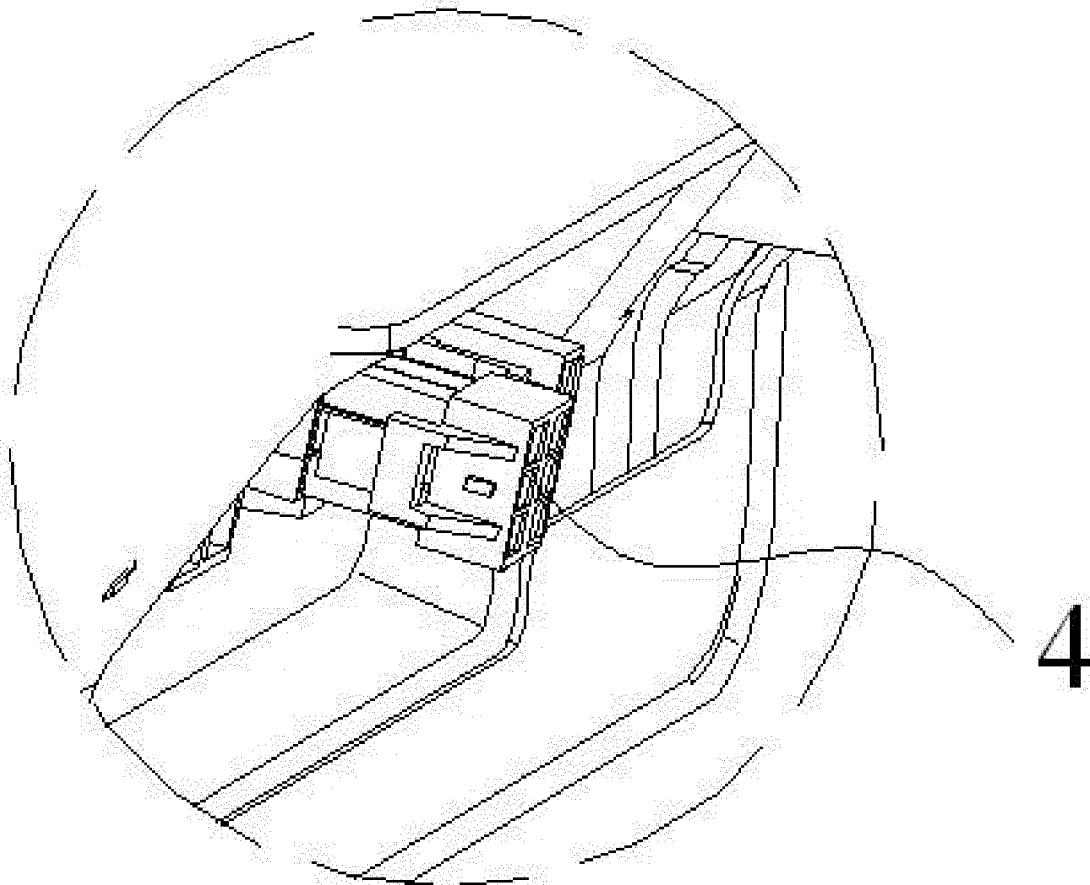


FIG. 7

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- US 20110146335 A1 [0004]